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Advances and Trends in Geodesy, Cartography and Geoinformatics II Apr 30 2021 This volume contains a selection of peer-reviewed papers presented at the International Scientific and Professional Conference Geodesy, Cartography and Geoinformatics 2019 (GCG 2019). The conference provided a forum for prominent scientists, researchers and professionals from Slovakia, Poland and the Czech Republic to present novel and fundamental advances in the fields of geodesy, cartography and geoinformatics. Conference participants had the opportunity to exchange and share their experiences, research and results solved within scientific research projects with other colleagues. The conference was focused on a wide spectrum of actual topics and subjects areas in Surveying and mine surveying, Geodetic control and geodynamics and Cartography and Geoinformatics collected in this proceedings volume. The Book Series "Advances and Trends in Geodesy, Cartography and Geoinformatics" is, in line with its long tradition, devoted to the publication of proceedings of peer-reviewed international conferences focusing on presenting technological and scientific advances in modern geodesy, geoinformatics, cartography, photogrammetry, remote sensing, geography, and related sciences. It plays an extremely important role in accelerating the development of all these disciplines, stimulating advanced education and training through the wide dissemination of new scientific knowledge and trends in Geodesy, Cartography and Geoinformatics to a broad group of scientists and specialists.

Feature Papers of Forecasting Jan 28 2021 Nowadays, forecast applications are receiving unprecedented attention thanks to their capability to improve the decision-making processes by providing useful indications. A large number of forecast approaches related to different forecast horizons and to the specific problem that have to be predicted have been proposed in recent scientific literature, from physical models to data-driven statistic and machine learning approaches. In this Special Issue, the most recent and high-quality researches about forecast are collected. A total of nine papers have been selected to represent a wide range of applications, from weather and environmental predictions to economic and management forecasts. Finally, some applications related to the forecasting of the different phases of COVID in Spain and the photovoltaic power production have been presented.

Principles of Data Science Oct 25 2020 This book provides readers with a thorough understanding of various research areas within the field of data science. The book introduces readers to various techniques for data acquisition, extraction, and cleaning, data summarizing and modeling, data analysis and communication techniques, data science tools, deep learning, and various data science applications. Researchers can extract and conclude various future ideas and topics that could result in potential publications or thesis. Furthermore, this book contributes to Data Scientists' preparation and to enhancing their knowledge of the field. The book provides a rich collection of manuscripts in highly regarded data science topics, edited by professors with long experience in the field of data science. Introduces various techniques, methods, and algorithms adopted by Data Science experts Provides a detailed explanation of data science perceptions, reinforced by practical examples Presents a road map of future trends suitable for innovative data science research and practice

R Markdown Aug 23 2020 R Markdown: The Definitive Guide is the first official book authored by the core R Markdown developers that provides a comprehensive and accurate reference to the R Markdown ecosystem. With R Markdown, you can easily create reproducible data analysis reports, presentations, dashboards, interactive applications, books, dissertations, websites, and journal articles, while enjoying the simplicity of Markdown and the great power of R and other languages. In this book, you will learn Basics: Syntax of Markdown and R code chunks, how to generate figures and tables, and how to use other computing languages Built-in output formats of R Markdown: PDF/HTML/Word/RTF/Markdown documents and ioslides/Slidy/Beamer/PowerPoint presentations Extensions and applications: Dashboards, Tufte handouts, xaringan/reveal.js presentations, websites, books, journal articles, and interactive tutorials Advanced topics: Parameterized reports, HTML widgets, document templates, custom output formats, and Shiny documents. Yihui Xie is a software engineer at RStudio. He has authored and co-authored several R packages, including knitr, rmarkdown, bookdown, blogdown, shiny, xaringan, and animation. He has published three other books, Dynamic Documents with R and knitr, bookdown: Authoring Books and Technical Documents with R Markdown, and blogdown: Creating Websites with R Markdown. J.J. Allaire is the founder of RStudio and the creator of the RStudio IDE. He is an author of several packages in the R Markdown ecosystem including rmarkdown, flexdashboard, learnr, and radix. Garrett Grolemond is the co-author of R for Data Science and author of Hands-On Programming with R. He wrote the lubridate R package and works for RStudio as an advocate who trains engineers to do data science with R and the Tidyverse.

Level Up! Nov 25 2020 Design and build cutting-edge video games with help from video game expert Scott Rogers! If you want to design and build cutting-edge video games but aren't sure where to start, then this is the book for you. Written by leading video game expert Scott Rogers, who has designed the hits Pac Man World, Maxim vs. Army of Zin, and SpongeBob Squarepants, this book is full of Rogers's wit and imaginative style that demonstrates everything you need to know about designing great video games. Features an approachable writing style that considers game designers from all levels of expertise and experience Covers the entire video game creation process, including developing marketable ideas, understanding what gamers want, working with player actions, and more Offers techniques for creating non-human characters and using the camera as a character Shares helpful insight on the business of design and how to create design documents So, put your game face on and start creating memorable, creative, and unique video games with this book!

Practical Machine Learning with Python Dec 07 2021 Master the essential skills needed to recognize and solve complex problems with machine learning and deep learning. Using real-world examples that leverage the popular Python machine learning ecosystem, this book is your perfect companion for learning the art and science of machine learning to become a successful practitioner. The concepts, techniques, tools, frameworks, and methodologies used in this book will teach you how to think, design, build, and execute machine learning systems and projects successfully. Practical Machine Learning with Python follows a structured and comprehensive three-tiered approach packed with hands-on examples and code. Part 1 focuses on understanding machine learning concepts and tools. This includes machine learning basics with a broad overview of algorithms, techniques, concepts and applications, followed by a tour of the entire Python machine learning ecosystem. Brief guides for useful machine learning tools, libraries and frameworks are also covered. Part 2

details standard machine learning pipelines, with an emphasis on data processing analysis, feature engineering, and modeling. You will learn how to process, wrangle, summarize and visualize data in its various forms. Feature engineering and selection methodologies will be covered in detail with real-world datasets followed by model building, tuning, interpretation and deployment. Part 3 explores multiple real-world case studies spanning diverse domains and industries like retail, transportation, movies, music, marketing, computer vision and finance. For each case study, you will learn the application of various machine learning techniques and methods. The hands-on examples will help you become familiar with state-of-the-art machine learning tools and techniques and understand what algorithms are best suited for any problem. Practical Machine Learning with Python will empower you to start solving your own problems with machine learning today! What You'll Learn Execute end-to-end machine learning projects and systems Implement hands-on examples with industry standard, open source, robust machine learning tools and frameworks Review case studies depicting applications of machine learning and deep learning on diverse domains and industries Apply a wide range of machine learning models including regression, classification, and clustering. Understand and apply the latest models and methodologies from deep learning including CNNs, RNNs, LSTMs and transfer learning. Who This Book Is For IT professionals, analysts, developers, data scientists, engineers, graduate students

Clinical Nuclear Medicine Physics with MATLAB® Jul 02 2021 The use of MATLAB® in clinical Medical Physics is continuously increasing, thanks to new technologies and developments in the field. However, there is a lack of practical guidance for students, researchers, and medical professionals on how to incorporate it into their work. Focusing on the areas of diagnostic Nuclear Medicine and Radiation Oncology Imaging, this book provides a comprehensive treatment of the use of MATLAB in clinical Medical Physics, in Nuclear Medicine. It is an invaluable guide for medical physicists and researchers, in addition to postgraduates in medical physics or biomedical engineering, preparing for a career in the field. In the field of Nuclear Medicine, MATLAB enables quantitative analysis and the visualization of nuclear medical images of several modalities, such as Single Photon Emission Computed Tomography (SPECT), Positron Emission Tomography (PET), or a hybrid system where a Computed Tomography system is incorporated into a SPECT or PET system or similarly, a Magnetic Resonance Imaging system (MRI) into a SPECT or PET system. Through a high-performance interactive software, MATLAB also allows matrix computation, simulation, quantitative analysis, image processing, and algorithm implementation. MATLAB can provide medical physicists with the necessary tools for analyzing and visualizing medical images. It is useful in creating imaging algorithms for diagnostic and therapeutic purposes, solving problems of image reconstruction, processing, and calculating absorbed doses with accuracy. An important feature of this application of MATLAB is that the results are completely reliable and are not dependent on any specific γ -cameras and workstations. The use of MATLAB algorithms can greatly assist in the exploration of the anatomy and functions of the human body, offering accurate and precise results in Nuclear Medicine studies. KEY FEATURES Presents a practical, case-based approach whilst remaining accessible to students Contains chapter contributions from subject area specialists across the field Includes real clinical problems and examples, with worked through solutions Maria Lyra Georgosopoulou, PhD, is a Medical Physicist and Associate Professor at the National and Kapodistrian University of Athens, Greece. Photo credit: The Antikythera Mechanism is the world's oldest known analog computer. It consisted of many wheels and discs that could be placed onto the mechanism for calculations. It is possible that the first algorithms and analog calculations in mathematics were implemented with this mechanism, invented in the early first centuries BC. It has been selected for the cover to demonstrate the importance of calculations in science.

Earth Observation Data Cubes Dec 27 2020 Satellite Earth observation (EO) data have already exceeded the petabyte scale and are increasingly freely and openly available from different data providers. This poses a number of issues in terms of volume (e.g., data volumes have increased 10 \times in the last 5 years); velocity (e.g., Sentinel-2 is capturing a new image of any given place every 5 days); and variety (e.g., different types of sensors, spatial/spectral resolutions). Traditional approaches to the acquisition, management, distribution, and analysis of EO data have limitations (e.g., data size, heterogeneity, and complexity) that impede their true information potential to be realized. Addressing these big data challenges requires a change of paradigm and a move away from local processing and data distribution methods to lower the barriers caused by data size and related complications in data management. To tackle these issues, EO data cubes (EODC) are a new paradigm revolutionizing the way users can store, organize, manage, and analyze EO data. This Special Issue is consequently aiming to cover the most recent advances in EODC developments and implementations to broaden the use of EO data to larger communities of users, support decision-makers with timely and actionable information converted into meaningful geophysical variables, and ultimately unlock the information power of EO data.

Backscattering and RF Sensing for Future Wireless Communication Jun 13 2022 Backscattering and RF Sensing for Future Wireless Communication Discover what lies ahead in wireless communication networks with this insightful and forward-thinking book written by experts in the field Backscattering and RF Sensing for Future Wireless Communication delivers a concise and insightful picture of emerging and future trends in increasing the efficiency and performance of wireless communication networks. The book shows how the immense challenge of frequency saturation could be met via the deployment of intelligent planar electromagnetic structures. It provides an in-depth coverage of the fundamental physics behind these structures and assesses the enhancement of the performance of a communication network in challenging environments, like densely populated urban centers. The distinguished editors have included resources from a variety of leading voices in the field who discuss topics such as the engineering of metasurfaces at a large scale, the electromagnetic analysis of planar metasurfaces, and low-cost and reliable backscatter communication. All of the included works focus on the facilitation of the development of intelligent systems designed to enhance communication network performance. Readers will also benefit from the inclusion of: A thorough introduction to the evolution of wireless communication networks over the last thirty years, including the imminent saturation of the frequency spectrum An exploration of state-of-the-art techniques that next-generation wireless networks will likely incorporate, including software-controlled frameworks involving artificial intelligence An examination of the scattering of electromagnetic waves by metasurfaces, including how wave propagation differs from traditional bulk materials A treatment of the evolution of artificial intelligence in wireless communications Perfect for researchers in wireless communications, electromagnetics, and urban planning, Backscattering and RF Sensing for Future Wireless Communication will also earn a place in the libraries of government policy makers, technologists, and telecom industry stakeholders who wish to get a head start on understanding the technologies that will enable tomorrow's wireless communications.

Python Data Science Handbook Aug 03 2021 For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—IPython, NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms

Advances in Intelligent Systems and Computing IV Feb 15 2020 This book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issues in big data and cloud computing, computation linguistics, and cyber-physical systems. It also reports on important topics in intelligent information management. Written by active researchers, the respective chapters are based on selected papers presented at the XIV International Scientific and Technical Conference on Computer Science and Information Technologies (CSIT 2019), held on September 17-20, 2019, in Lviv, Ukraine. The conference was jointly organized by the Lviv Polytechnic National University, Ukraine, the Kharkiv National University of Radio Electronics, Ukraine, and the Technical University of Lodz, Poland, under patronage of Ministry of Education and Science of Ukraine. Given its breadth of coverage, the book provides academics and professionals

with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

The Anarchist Cookbook Aug 15 2022 The Anarchist Cookbook will shock, it will disturb, it will provoke. It places in historical perspective an era when "Turn on, Burn down, Blow up" are revolutionary slogans of the day. Says the author "This book... is not written for the members of fringe political groups, such as the Weatherman, or The Minutemen. Those radical groups don't need this book. They already know everything that's in here. If the real people of America, the silent majority, are going to survive, they must educate themselves. That is the purpose of this book." In what the author considers a survival guide, there is explicit information on the uses and effects of drugs, ranging from pot to heroin to peanuts. There is detailed advice concerning electronics, sabotage, and surveillance, with data on everything from bugs to scramblers. There is a comprehensive chapter on natural, non-lethal, and lethal weapons, running the gamut from cattle prods to sub-machine guns to bows and arrows.

Algorithms for Synthetic Aperture Radar Imagery X May 12 2022

Numerical Methods in Engineering with Python 3 Sep 23 2020 Provides an introduction to numerical methods for students in engineering. It uses Python 3, an easy-to-use, high-level programming language.

Gray Hat Python Feb 26 2021 Python is fast becoming the programming language of choice for hackers, reverse engineers, and software testers because it's easy to write quickly, and it has the low-level support and libraries that make hackers happy. But until now, there has been no real manual on how to use Python for a variety of hacking tasks. You had to dig through forum posts and man pages, endlessly tweaking your own code to get everything working. Not anymore. Gray Hat Python explains the concepts behind hacking tools and techniques like debuggers, trojans, fuzzers, and emulators. But author Justin Seitz goes beyond theory, showing you how to harness existing Python-based security tools—and how to build your own when the pre-built ones won't cut it. You'll learn how to: -Automate tedious reversing and security tasks -Design and program your own debugger -Learn how to fuzz Windows drivers and create powerful fuzzers from scratch -Have fun with code and library injection, soft and hard hooking techniques, and other software trickery -Sniff secure traffic out of an encrypted web browser session -Use PyDBG, Immunity Debugger, Sulley, IDAPython, PyEMU, and more The world's best hackers are using Python to do their handiwork. Shouldn't you?

Programming Python Dec 19 2022 Already the industry standard for Python users, Programming Python from O'Reilly just got even better. This third edition has been updated to reflect current best practices and the abundance of changes introduced by the latest version of the language, Python 2.5. Whether you're a novice or an advanced practitioner, you'll find this refreshed book more than lives up to its reputation.

Programming Python, 3rd Edition, teaches you the right way to code. It explains Python language syntax and programming techniques in a clear and concise manner, with numerous examples that illustrate both correct usage and common idioms. By reading this comprehensive guide, you'll learn how to apply Python in real-world problem domains such as: GUI programming Internet scripting Parallel processing Database management Networked applications Programming Python, Third Edition covers each of these target domains gradually, beginning with in-depth discussions of core concepts and then progressing toward complete programs. Large examples do appear, but only after you've learned enough to understand their techniques and code. Along the way, you'll also learn how to use the Python language in realistically scaled programs—concepts such as Object-Oriented Programming (OOP) and code reuse are recurring side themes throughout this text. If you're interested in Python programming, then this O'Reilly classic needs to be within arm's reach. The wealth of practical advice, snippets of code, and patterns of program design can all be put into use on an adaily basis—making your life easier and more productive. Reviews of the second edition: "...about as comprehensive as any book can be." --Dr. Dobb's Journal "If the language had manuals, they would undoubtedly be the texts from O'Reilly... 'Learning Python' and 'Programming Python' are definitive treatments." --SD Times

Transport Infrastructure and Systems Apr 18 2020 Transport Infrastructure Asset management in transport infrastructure, financial viability of transport engineering projects/ Life cycle Cost Analysis, Life-Cycle Assessment and Sustainability Assessment of transport infrastructure/ Infrastructures financing and pricing with equity appraisal, operation optimization and energy management/ Low-Volume roads: planning, maintenance, operations, environmental and social issues/ Public-Private Partnership (PPP) experience in transport infrastructure in different countries and economic conditions/ Airport Pavement Management Systems, runway design and maintenance/ Port maintenance and development issues, technology relating to cargo handling, landside access, cruise operations/ Infrastructure Building Information Modelling (I-BIM) / Pavement design and innovative bituminous materials/ Recycling and re-use in road pavements, environmentally sustainable technologies/ Stone pavements, ancient roads and historic railways/ Cementitious stabilization of materials used in the rehabilitation of transportation infrastructure. Transport Systems Sustainable transport and the environment protection including green vehicles/ Urban transport, land use development, spatial and transport planning/ Bicycling, bike, bike-sharing systems, cycling mobility/ Human factor in transport systems/ Intelligent Mobility: emerging technologies to enable the smarter movement of people and goods/ Airport landside: access roads, parking facilities, terminal facilities, aircraft apron and the adjacent taxiway/ Transportation policy, planning and design, modelling and decision making/ Transport economics, finance and pricing issues, optimization problems, equity appraisal/ Road safety impact assessments, road safety audits, the management of road network safety and safety inspections/ Tunnels and underground structures: preventing incidents—accidents mitigating their effects for both people and goods/ Traffic flow characteristics, traffic control devices, work zone traffic control, highway capacity and quality of service/ Track-vehicle interactions in railway systems, capacity analysis of railway networks/ Risk assessment and safety in air and railway transport, reliability aspects/ Maritime transport and inland waterways transport research/ Intermodal freight transport: terminals and logistics.

Handbook on Constructing Composite Indicators: Methodology and User Guide May 20 2020 A guide for constructing and using composite indicators for policy makers, academics, the media and other interested parties. In particular, this handbook is concerned with indicators which compare and rank country performance.

Data Science Quick Reference Manual - Part II Nov 18 2022 This work follows the 2021 curriculum of the Association for Computing Machinery for specialists in Data Sciences, with the aim of producing a manual that collects notions in a simplified form, facilitating a personal training path starting from specialized skills in Computer Science or Mathematics or Statistics. It has a bibliography with links to quality material but freely usable for your own training and contextual practical exercises. Second of a series of books, it covers methodological aspects, analysis and visualization. It describes the CRISP DM methodology, the working phases, the success criteria, the languages and the environments that can be used, the application libraries. Since this book uses Orange for the application aspects, its installation and widgets are described. In visualization, historical notes are made, and next the book describes the characteristics of an effective visualization, the types of messages that can be conveyed, the Grammar of Graphics, the use of a graph and a dashboard, the software and libraries that can be used, the role and use of color. 55 types of graphs are then analyzed, reporting meaning, use, examples and visual dimensions also with a vocabulary of graphs and summary tables. Examples are given in Orange and the possible use of Python with Orange is explained. Visualization-based inference is discussed, exploratory and confirmatory analysis is defined and techniques are reported. The book is accompanied by supporting material and it is possible to download the project samples in Orange and sample data.

Introduction to Computer Science Using Python Oct 13 2019 Introduction to Computer Science Using Python: A Computational Problem-Solving Focus, recommended by Guido van Rossum, the creator of Python ("This is not your average Python book... I think this book is a great text for anyone teaching CS1"). With a focus on computational problem solving from Chapter 1, this text provides numerous hands-on exercises and examples, each chapter ending with a significant-size program demonstrating the step-by-step process of program development, testing, and debugging. A final chapter includes the history of computing, starting with Charles Babbage, containing over 65 historical images. An end-of-book Python 3 Programmers' Reference is also included for quick lookup of Python details. Extensive instructor materials are provided for those adopting for classroom use, including an instructors' manual, over 1,000 well-developed slides covering all fundamental topics of each chapter, source code, and test bank.

Basic Radar Analysis, Second Edition Jan 20 2023 This highly-anticipated second edition of an Artech House classic covers several key radar analysis areas: the radar range equation, detection theory, ambiguity

functions, waveforms, antennas, active arrays, receivers and signal processors, CFAR and chaff analysis. Readers will be able to predict the detection performance of a radar system using the radar range equation, its various parameters, matched filter theory, and Swerling target models. The performance of various signal processors, single pulse, pulsed Doppler, LFM, NLFM, and BPSK, are discussed, taking into account factors including MTI processing, integration gain, weighting loss and straddling loss. The details of radar analysis are covered from a mathematical perspective, with in-depth breakdowns of radar performance in the presence of clutter. Readers will be able to determine the noise temperature of a multi-channel receiver as it is used in active arrays. With the addition of three new chapters on moving target detectors, inverse synthetic aperture radar (ISAR) and constant false alarm rate (CFAR) and new MATLAB codes, this expanded second edition will appeal to the novice as well as the experienced practitioner.

Deep Learning Applications of Short-Range Radars Oct 17 2022 This exciting new resource covers various emerging applications of short range radars, including people counting and tracking, gesture sensing, human activity recognition, air-drawing, material classification, object classification, vital sensing by extracting features such as range-Doppler Images (RDI), range-cross range images, Doppler Spectrogram or directly feeding raw ADC data to the classifiers. The book also presents how deep learning architectures are replacing conventional radar signal processing pipelines enabling new applications and results. It describes how deep convolutional neural networks (DCNN), long-short term memory (LSTM), feedforward networks, regularization, optimization algorithms, connectionist This exciting new resource presents emerging applications of artificial intelligence and deep learning in short-range radar. The book covers applications ranging from industrial, consumer space to emerging automotive applications. The book presents several human-machine interface (HMI) applications, such as gesture recognition and sensing, human activity classification, air-writing, material classification, vital sensing, people sensing, people counting, people localization and in-cabin automotive occupancy and smart trunk opening. The underpinnings of deep learning are explored, outlining the history of neural networks and the optimization algorithms to train them. Modern deep convolutional neural network (DCNN), popular DCNN architectures for computer vision and their features are also introduced. The book presents other deep learning architectures, such as long-short term memory (LSTM), auto-encoders, variational auto-encoders (VAE), and generative adversarial networks (GAN). The application of human activity recognition as well as the application of air-writing using a network of short-range radars are outlined. This book demonstrates and highlights how deep learning is enabling several advanced industrial, consumer and in-cabin applications of short-range radars, which weren't otherwise possible. It illustrates various advanced applications, their respective challenges, and how they are been addressed using different deep learning architectures and algorithms.

Sundarbans Mangrove Systems Jun 01 2021 Sundarbans, a UNESCO heritage site, is the world's largest single chunk of mangroves distributed on the Indian and Bangladesh coasts. The mangroves and associated ecosystems are one of the most fertile ecosystems of the earth. Sundarbans Mangrove Systems: A Geo-Informatics Approach portrays different perspectives of studying Sundarbans and mangroves using geospatial analysis. This book highlights the major issues with the Sundarbans mangrove forest, its future conservation strategies and its ecological importance using geo-informatics technology. It explains the usage of remote sensing data for providing information about the present state of mangroves and their tropic status, including assessment in terms of extent, density of community, condition, diversity, identifying potential habitats and heterogeneity. Furthermore, it discusses the use of hyperspectral remote sensing data for species level classification of mangroves, community zonation for biodiversity assessment and for preparing management plans for conservation. KEY FEATURES Exclusively covers the ecological state of Sundarbans (mangrove systems) through geo-informatic studies Describes the application of a combination of geomorphological, biogeochemical and remote sensing methods to the analysis of temporal changes Includes environmental factors affecting the health and decline of mangroves Covers biodiversity and ecological controls in mangroves ecosystems Discusses a remote sensing approach for tropical forested island and mangroves mapping This book is aimed at graduate students and researchers in environmental sciences, ecology, marine sciences, biology, geosciences and GIS/remote sensing areas.

NASA Tech Briefs Mar 10 2022

New Perspectives Concepts Introductory Mar 18 2020 Technology impacts every aspect of life, and choices are endless. You need to know how to evaluate devices, choose apps, maintain a compelling online reputation and lock down digital security. Cengage's NEW PERSPECTIVES COMPUTER CONCEPTS INTRODUCTORY 21st Edition goes beyond the intuitive how-to of apps and social media to delve into the broad concepts that are guiding current technologies, such as self-driving cars, virtual reality, file sharing torrents, encrypted communications, photo forensics and the Internet of Things. Detailed illustrations and interactive features help you quickly understand technical topics. Completely up to date, this edition offers an insightful overview of what every learner should know about using technology to complete your education, launch a successful career and engage in issues that shape today's world. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Instructor's Resource Manual for Starr and Taggart's Biology Apr 11 2022

Energy Research Abstracts Jun 20 2020

New Perspectives Computer Concepts Comprehensive Mar 30 2021 Helping you understand the technological foundations for a wide range of digital devices, New Perspectives Computer Concepts Comprehensive, 21st edition, presents what every learner should know about using technology to complete your education, launch a successful career and engage in issues that shape today's world. The book's proven learning path is structured with today's busy reader in mind. Leading tech author June Parsons combines the latest on emerging technology with detailed illustrations and interactive activities that help you quickly understand technical topics. This edition provides updated information on current operating systems, digital rights management, the deep web and dark web, blogs, videoconferencing trends, the pandemic's impact on tech jobs, work-at-home, remote learning and more. In addition, a unique module provides a hands-on introduction to programming. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The Antivirus Hacker's Handbook Dec 15 2019 Hack your antivirus software to stamp out future vulnerabilities The Antivirus Hacker's Handbook guides you through the process of reverse engineering antivirus software. You explore how to detect and exploit vulnerabilities that can be leveraged to improve future software design, protect your network, and anticipate attacks that may sneak through your antivirus' line of defense. You'll begin building your knowledge by diving into the reverse engineering process, which details how to start from a finished antivirus software program and work your way back through its development using the functions and other key elements of the software. Next, you leverage your new knowledge about software development to evade, attack, and exploit antivirus software—all of which can help you strengthen your network and protect your data. While not all viruses are damaging, understanding how to better protect your computer against them can help you maintain the integrity of your network. Discover how to reverse engineer your antivirus software Explore methods of antivirus software evasion Consider different ways to attack and exploit antivirus software Understand the current state of the antivirus software market, and get recommendations for users and vendors who are leveraging this software The Antivirus Hacker's Handbook is the essential reference for software reverse engineers, penetration testers, security researchers, exploit writers, antivirus vendors, and software engineers who want to understand how to leverage current antivirus software to improve future applications.

The Wildlife Techniques Manual Jul 14 2022 A standard text in a variety of courses, the Techniques Manual, as it is commonly called, covers every aspect of modern wildlife management and provides practical information for applying the hundreds of methods described in its pages. To effectively incorporate the explosion of new information in the wildlife profession, this latest edition is logically organized into a two-volume set: Volume 1 is devoted to research techniques and Volume 2 focuses on management methodologies.

The Data Science Design Manual Oct 05 2021 This engaging and clearly written textbook/reference provides a must-have introduction to the rapidly emerging interdisciplinary field of data science. It focuses on the

principles fundamental to becoming a good data scientist and the key skills needed to build systems for collecting, analyzing, and interpreting data. The Data Science Design Manual is a source of practical insights that highlights what really matters in analyzing data, and provides an intuitive understanding of how these core concepts can be used. The book does not emphasize any particular programming language or suite of data-analysis tools, focusing instead on high-level discussion of important design principles. This easy-to-read text ideally serves the needs of undergraduate and early graduate students embarking on an "Introduction to Data Science" course. It reveals how this discipline sits at the intersection of statistics, computer science, and machine learning, with a distinct heft and character of its own. Practitioners in these and related fields will find this book perfect for self-study as well. Additional learning tools: Contains "War Stories," offering perspectives on how data science applies in the real world Includes "Homework Problems," providing a wide range of exercises and projects for self-study Provides a complete set of lecture slides and online video lectures at www.data-manual.com Provides "Take-Home Lessons," emphasizing the big-picture concepts to learn from each chapter Recommends exciting "Kaggle Challenges" from the online platform Kaggle Highlights "False Starts," revealing the subtle reasons why certain approaches fail Offers examples taken from the data science television show "The Quant Shop" (www.quant-shop.com)

MATLAB Simulations for Radar Systems Design Jul 22 2020 Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req

Elegant SciPy Feb 09 2022 Welcome to Scientific Python and its community. If you're a scientist who programs with Python, this practical guide not only teaches you the fundamental parts of SciPy and libraries related to it, but also gives you a taste for beautiful, easy-to-read code that you can use in practice. You'll learn how to write elegant code that's clear, concise, and efficient at executing the task at hand. Throughout the book, you'll work with examples from the wider scientific Python ecosystem, using code that illustrates principles outlined in the book. Using actual scientific data, you'll work on real-world problems with SciPy, NumPy, Pandas, scikit-image, and other Python libraries. Explore the NumPy array, the data structure that underlies numerical scientific computation Use quantile normalization to ensure that measurements fit a specific distribution Represent separate regions in an image with a Region Adjacency Graph Convert temporal or spatial data into frequency domain data with the Fast Fourier Transform Solve sparse matrix problems, including image segmentations, with SciPy's sparse module Perform linear algebra by using SciPy packages Explore image alignment (registration) with SciPy's optimize module Process large datasets with Python data streaming primitives and the Toolz library

New Perspectives on Computer Concepts 2018: Comprehensive Nov 06 2021 In today's world where technology impacts every aspect of life, you need to know how to evaluate devices, choose apps, maintain a professional online reputation, and ensure digital security. NEW PERSPECTIVES ON COMPUTER CONCEPTS 2018, COMPREHENSIVE offers the insights to help. This book goes beyond the intuitive how-to of apps and social media to delve into broad concepts that are guiding current technologies such as self-driving cars, virtual reality, file sharing torrents, encrypted communications, photo forensics, and the Internet of Things. Numerous illustrations and interactive features make mastering technical topics a breeze, while the book's proven learning path is structured with today's busy reader in mind. This edition offers an insightful overview of what today's readers must know about using technology to complete an education, secure a successful career, and engage in issues that shape today's world. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Microwave, Radar & RF Engineering Jan 16 2020 This is a textbook for upper undergraduate and graduate courses on microwave engineering, written in a student-friendly manner with many diagrams and illustrations. It works towards developing a foundation for further study and research in the field. The book begins with a brief history of microwaves and introduction to core concepts of EM waves and wave guides. It covers equipment and concepts involved in the study and measurement of microwaves. The book also discusses microwave propagation in space, microwave antennae, and all aspects of RADAR. The book provides core pedagogy with chapter objectives, summaries, solved examples, and end-of-chapter exercises. The book also includes a bonus chapter which serves as a lab manual with 15 simple experiments detailed with proper circuits, precautions, sample readings, and quiz/viva questions for each experiment. This book will be useful to instructors and students alike.

Robot Adventures in Python and C Sep 16 2022 In this book the author stresses software as the most important topic in modern robotics. In particular the book concentrates on software for mobile robots, and the author demonstrates how inexpensive solutions can be constructed by mounting Raspberry Pi controllers and cameras onto model cars or other simple mechanical drive systems. He introduces EyeSim-VR, a freely available system that can realistically simulate driving, swimming, diving, and walking robots. The emphasis throughout is on algorithm development and all software assignments can run on real robot hardware, as well as on the simulation system presented. The book is suitable for undergraduate and graduate courses in artificial intelligence and robotics, and also for self-study by practitioners. All software used in this book, including all example programs, can be freely downloaded online, with native applications for MacOS, Windows, Linux, and Raspberry Pi.

Weather Radar Nov 13 2019 With their images practically ubiquitous in the daily media, weather radar systems provide data not only for understanding weather systems and improving forecasts (especially critical for severe weather), but also for hydrological applications, flood warnings and climate research in which ground verification is needed for global precipitation measurements by satellites. This book offers an accessible overview of advanced methods, applications and modern research from the European perspective. An extensive introductory chapter summarizes the principles of weather radars and discusses the potential of modern radar systems, including Doppler and polarisation techniques, data processing, and error-correction methods. Addressing both specialist researchers and nonspecialists from related areas, this book will also be useful for graduate students planning to specialize in this field

Recent Advancements in Radar Imaging and Sensing Technology Jan 08 2022 The aim of this Printed Edition of Special Issue entitled "Recent Advancements in Radar Imaging and Sensing Technology" was to gather the latest research results in the area of modern radar technology using active and/or radar imaging sensing techniques in different applications, including both military use and a broad spectrum of civilian applications. As a result, the 19 papers that have been published highlighted a variety of topics related to modern radar imaging and microwave sensing technology. The sequence of articles included in the Printed Edition of Special Issue dealt with wide aspects of different applications of radar imaging and sensing technology in the area of topics including high-resolution radar imaging, novel Synthetic Aperture Radar (SAR) and Inverse SAR (ISAR) imaging techniques, passive radar imaging technology, modern civilian applications of using radar technology for sensing, multiply-input multiply-output (MIMO) SAR imaging, tomography imaging, among others.

Radar for Fully Autonomous Driving Feb 21 2023 This is the first book to bring together the increasingly complex radar automotive technologies and tools being explored and utilized in the development of fully autonomous vehicles - technologies and tools now understood to be an essential need for the field to fully mature. The book presents state-of-the-art knowledge as shared by the best and brightest experts working in the automotive radar industry today -- leaders who have "been there and done that." Each chapter is written as a standalone "master class" with the authors, seeing the topic through their eyes and experiences. Where beneficial, the chapters reference one another but can otherwise be read in any order desired, making the book an excellent go-to reference for a particular topic or review you need to understand. You'll get a big-picture tour of the key radar needs for fully autonomous vehicles, and how achieving these needs is complicated by the automotive environment's dense scenes, number of possible targets of interest, and mix of very large and very small returns. You'll then be shown the challenges from - and mitigations to - radio frequency interference (RFI), an ever-increasing challenge as the number of vehicles with radars - and radars per vehicle grow. The book also dives into the impacts of weather on radar performance, providing you with insights gained from extensive real-world testing. You are then taken through the integration and systems

considerations, especially regarding safety, computing needs, and testing. Each of these areas is influenced heavily by the needs of fully autonomous vehicles and are open areas of research and development. With this authoritative volume you will understand: * How to engage with radar designers (from a system integrator / OEM standpoint); * How to structure and set requirements for automotive radars; * How to address system safety needs for radars in fully autonomous vehicles; * How to assess weather impact on the radar and its ability to support autonomy; * How to include weather effects into specifications for radars. This is an essential reference for engineers currently in the autonomous vehicle arena and/or working in automotive radar development, as well as engineers and leaders in adjacent radar fields needing to stay abreast of the rapid developments in this exciting and dynamic field of research and development.

Orbital Mechanics for Engineering Students Sep 04 2021 Orbital Mechanics for Engineering Students, Second Edition, provides an introduction to the basic concepts of space mechanics. These include vector kinematics in three dimensions; Newton's laws of motion and gravitation; relative motion; the vector-based solution of the classical two-body problem; derivation of Kepler's equations; orbits in three dimensions; preliminary orbit determination; and orbital maneuvers. The book also covers relative motion and the two-impulse rendezvous problem; interplanetary mission design using patched conics; rigid-body dynamics used to characterize the attitude of a space vehicle; satellite attitude dynamics; and the characteristics and design of multi-stage launch vehicles. Each chapter begins with an outline of key concepts and concludes with problems that are based on the material covered. This text is written for undergraduates who are studying orbital mechanics for the first time and have completed courses in physics, dynamics, and mathematics, including differential equations and applied linear algebra. Graduate students, researchers, and experienced practitioners will also find useful review materials in the book. NEW: Reorganized and improved discussions of coordinate systems, new discussion on perturbations and quaternions NEW: Increased coverage of attitude dynamics, including new Matlab algorithms and examples in chapter 10 New examples and homework problems